CLAIMS

1. A method of determining characteristics representative of a physical and/or chemical transformation, in particular a reaction, the transformation occurring in a medium, in particular a reaction medium, flowing within at least one microreactor (1), the method comprising the following steps:

· establishing a flow of the medium under steady conditions through at least one region (6) of the microreactor;

· using analyzer means (11) to access the steady flow at at least one point (6_1, 6_2);

· measuring at least one magnitude characteristic of the medium at the or each point (6_1, 6_2) by using the analyzer means (11); and

· determining (via 10'; BR) characteristics representative of the transformation as a function of the result of the or each measurement.

2. A method according to claim 1, characterized in that the steady flow is accessed at different points (6_1, 6_2) that are distinct from one another in time and/or space.

3. A method according to claim 2, characterized in that different points (6_1, 6_2) are accessed that are distinct from one another in space.

4. A method according to claim 3, characterized in that, in order to access the different points, the microreactor is displaced while keeping the analyzer means stationary.

5. A method according to claim 3, characterized in that, in order to access the different points, the analyzer means is displaced while keeping the microreactor stationary.

6. A method according to any preceding claim, characterized in that the analyzer means is non-destructive with respect to the reaction medium.

7. A method according to any preceding claim, characterized in that the analyzer means is invasive, in particular the sensor is a probe.

8. A method according to any one of claims 1 to 6, characterized in that the or each point of the steady flow is accessed through a zone (8) of the microreactor (1) that is permeable to the analyzer means (11), in particular a window (8) that is transparent to visible light.

9. A method according to any preceding claim, characterized in that the transformation is a chemical and/or physical reaction.

10. A method according to any one of claims 1 to 8, characterized in that the transformation is a crystallization.

11. A method according to any preceding claim, characterized in that the steady flow possesses a rate lying in the range 1 mL/h to 1 L/h, and preferably in the range 0.1 L/h to 1 L/h.

12. A method according to any preceding claim, characterized in that parameters specific to the transformation are determined (by 10') as characteristics representative of said transformation.

13. A method according to any one of claims 1 to 11, characterized in that running parameters of the transformation are determined (by BR) as characteristics representative of the transformation.

14. A method according to claim 13, characterized in that the or each microreactor (1) within which the running parameters of the transformation are determined is/are disposed in parallel with other microreactors (1_2, ..., 1_n), and the various microreactors are fed with the same media, possessing the same flow rates, and under the same operating conditions.

15. A method according to claim 14, characterized in that the various parallel-connected microreactors (1, 1_2, ..., 1_n) are fed by means of a single upstream feed line (L).

16. A method according to any one of claims 13 to 15, characterized in that at least one instantaneous value (m) is obtained of at least one magnitude characteristic of the medium, the or each instantaneous value is compared with a reference value (c) for the or each characteristic magnitude, and the running of the transformation is modified (by s) as a function of the value of the ratio between said measured value and said reference value.

17. An installation for determining characteristics representative of a physical and/or chemical transformation, in particular a reaction, for implementing the method in accordance with any preceding claim, said transformation occurring in a medium, in particular a reaction medium, and the installation comprising:

· at least a first microreactor (1) through which said medium is suitable for flowing;

· an analyzer means (11);

· means (8) for accessing at least one point of a flow of the medium under steady conditions in at least one region (6) of the first microreactor;

· means (10, 11) for taking at least one measurement of at least one magnitude characteristic of the medium in the or each point; and

· means (10'; BR) for determining characteristics representative of the transformation as a function of the result of the or each measurement.

18. An installation according to claim 17, characterized in that displacement means are provided suitable for displacing the analyzer means (11) and the microreactor (1) relative to each other.

19. An installation according to claim 17 or claim 18, characterized in that the analyzer means is non-destructive relative to the reaction medium.

20. An installation according to any one of claims 17 to 19, characterized in that the analyzer means is intrusive, in particular the sensor is a probe.

21. An installation according to any one of claims 17 to 19, characterized in that the access means comprise a zone (8) of the microreactor (1) that is permeable to the analyzer means (11), in particular a window (8) that is transparent to visible light.

22. An installation according to any one of claims 17 to 21, for implementing the method according to claim 12, the installation being characterized in that the means for determining characteristics representative of the transformation are means (10') for determining parameters specific to said transformation.

23. An installation according to claim 22, characterized in that the means for determining parameters specific to said transformation include a computer (10').

24. An installation according to any one of claims 17 to 21, for implementing the method according to any one of claims 17 to 21, the installation being characterized in that the means for determining characteristics representative of the transformation are means (BR) for determining running parameters for said transformation.

25. An installation according to claim 24, characterized in that the means for determining running parameters of the transformation comprise a regulation loop (BR).

26. An installation according to claim 25, characterized in that the regulation loop (BR) possess a measurement line (m) put into communication with the analyzer means (11) and suitable for providing at least one instantaneous value of at least one characteristic magnitude, a reference line (c) suitable for providing at least one reference value for at least one characteristic magnitude, and an output line (s) put into communication with means (12) for running the reactor.

27. An installation according to any one of claims 24 to 26, characterized in that it further comprises at least one other microreactor (1_2, ..., 1_n) connected in parallel with the or each first microreactor (1).

28. An installation according to claim 27, characterized in that the various microreactors (1, 1_2, ..., 1_n) are fed by means of a single upstream feed line (L).